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Compact Navigation, Guidance and Control Actuator for Miniature Kinetic Energy Missiles

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CHAP Kickoff Meeting
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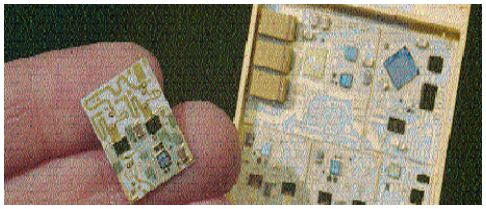
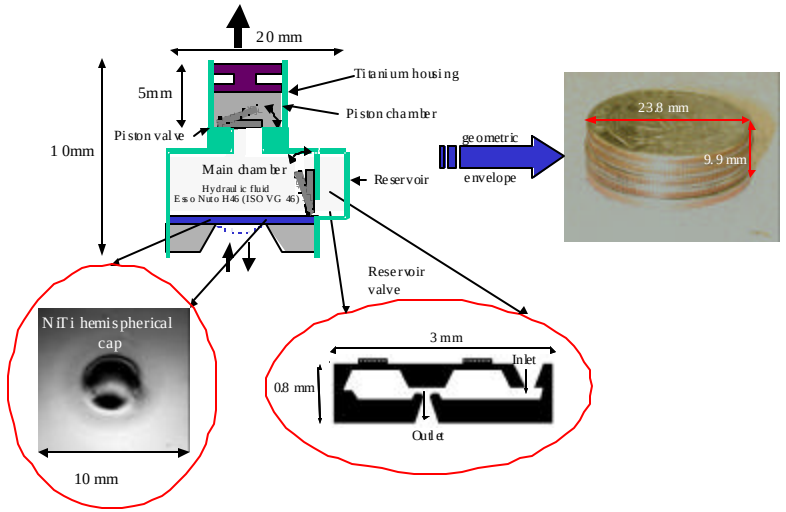
OBJECTIVES AND SCOPE OF THE PROGRAM

DESIGN & FABRICATE NEW COMPACT ACTUATOR COMBINING

- ***THIN FILM SHAPE MEMORY ALLOY:*** ***HIGH POWER DENSITY & IMPROVED BANDWIDTH***

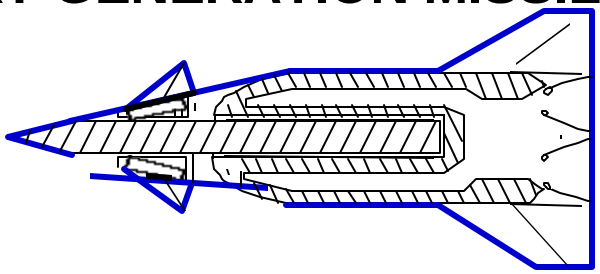


- ***HYDRAULIC RECTIFICATION:*** ***IMPROVED STROKE***
- ***DENSE POWER ELECTRONICS:*** ***COMPACT***



TO GUIDE & CONTROL NEXT-GENERATION MISSILES

- ***HIGHLY COMPACT***
- ***HIGH SPEED***
- ***LOW COST***



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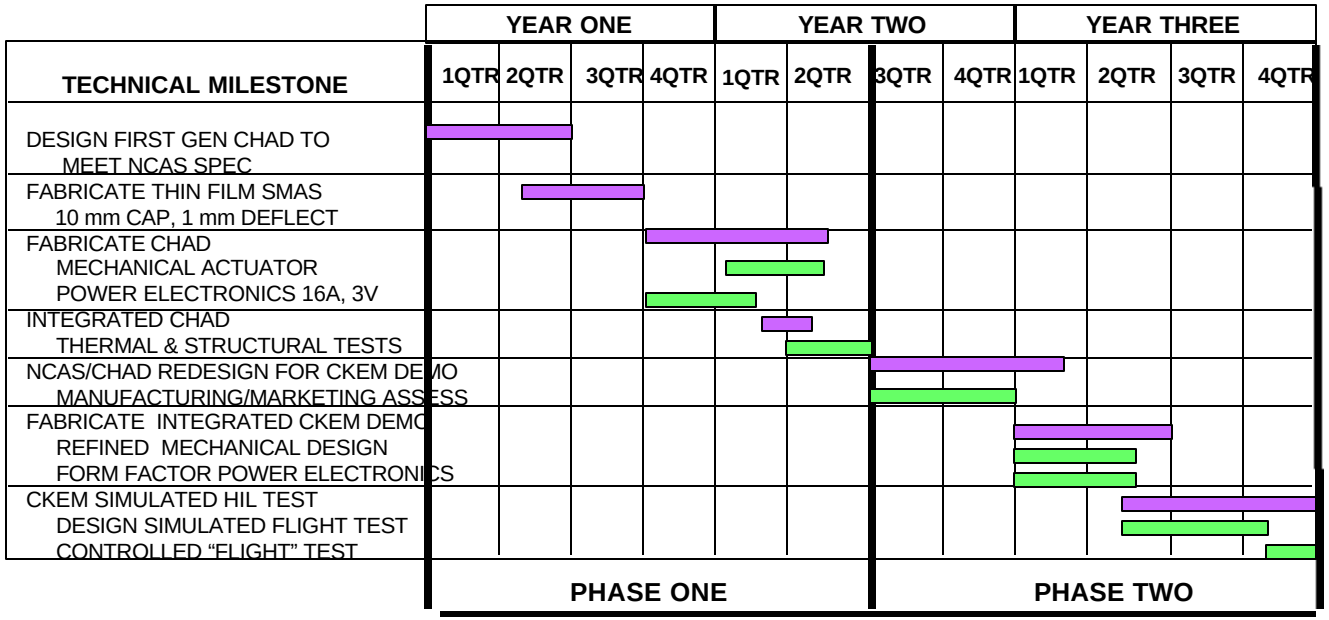
PROJECTED PROGRAM SCHEDULE



FABRICATION OF FIRST GENERATION MECHANICAL ACTUATOR & BREADBOARD POWER ELECTRONICS BY END OF PHASE I.

REFINE DESIGN FOR FORM FACTOR BEGINNING OF PHASE II.

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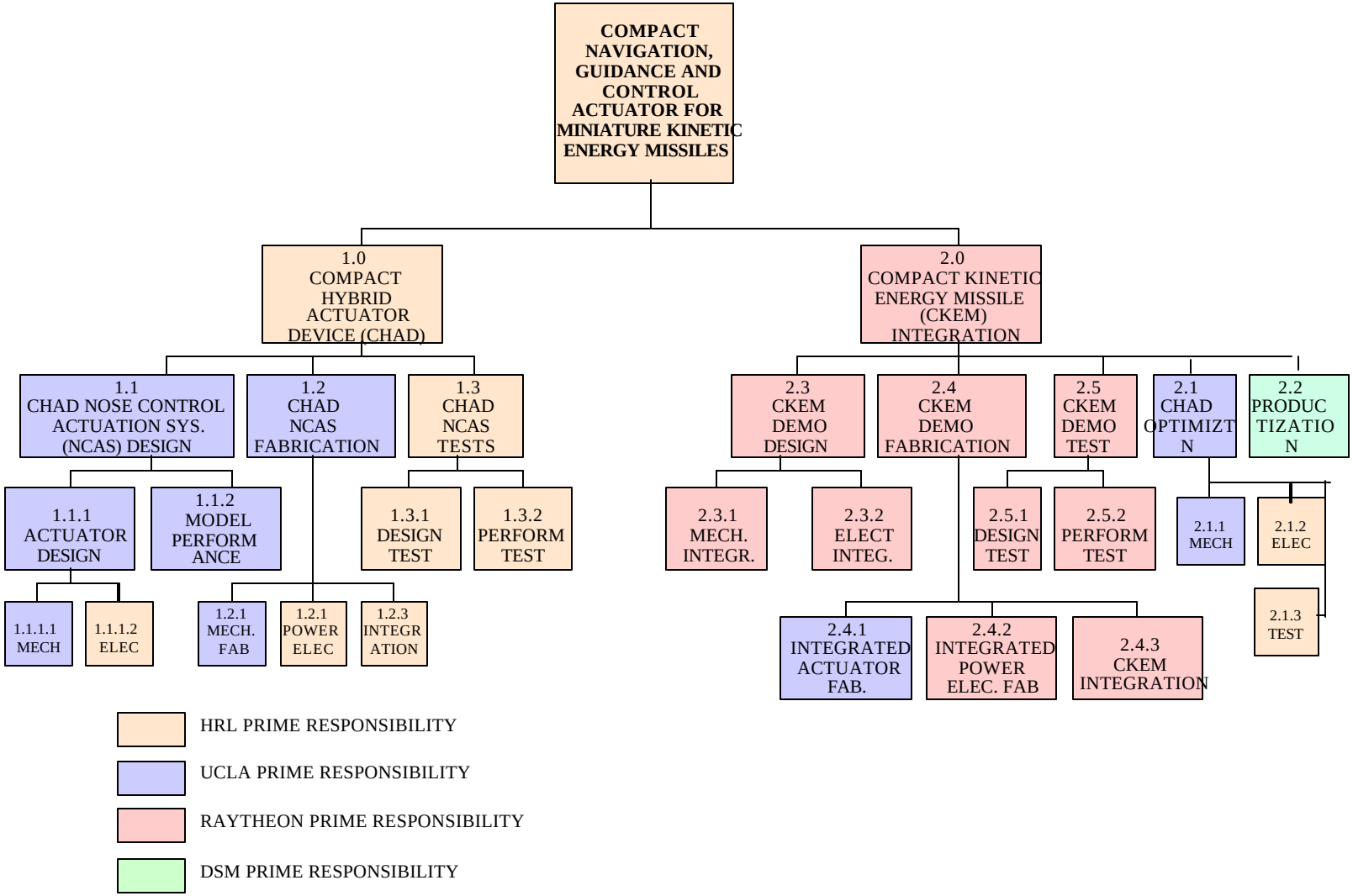
HIGHLY LEVERAGED TEAM EFFORT



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COMPACT HYBRID ACTUATOR DEVICE CONCEPT

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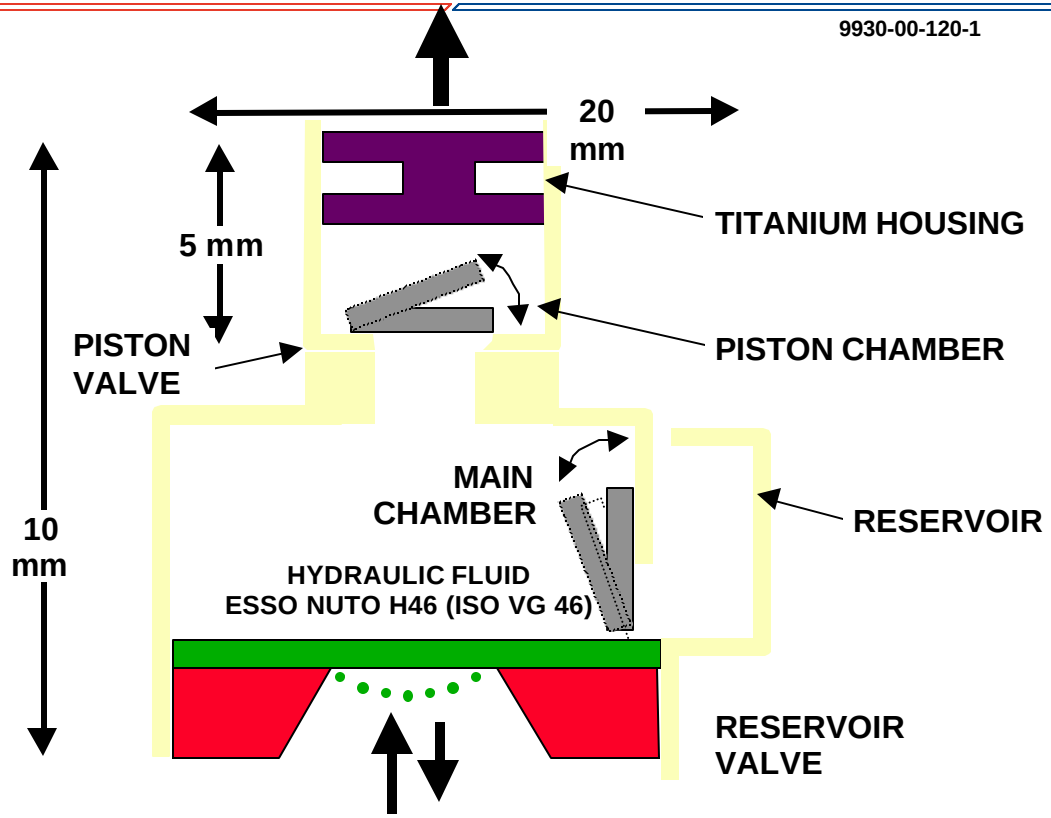
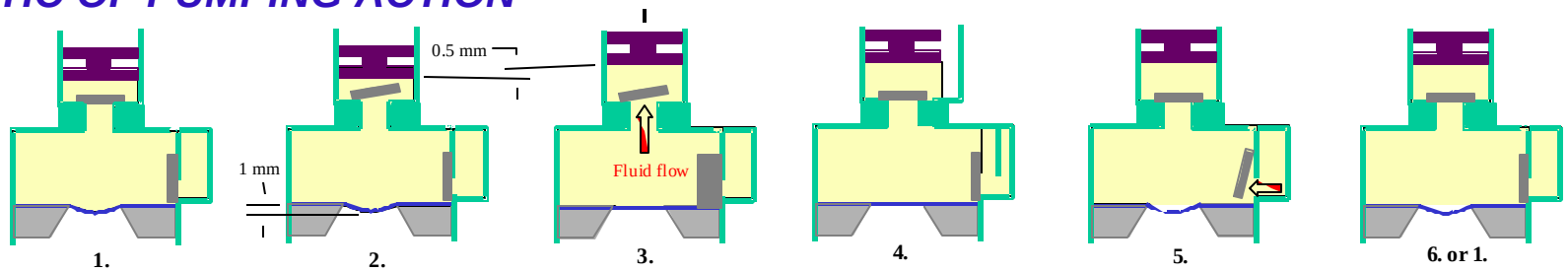


SCHEMATIC OF PUMPING ACTION



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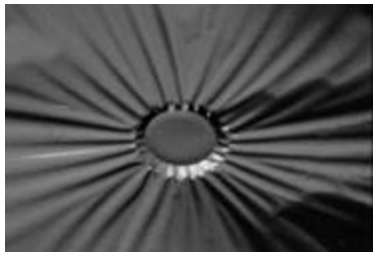
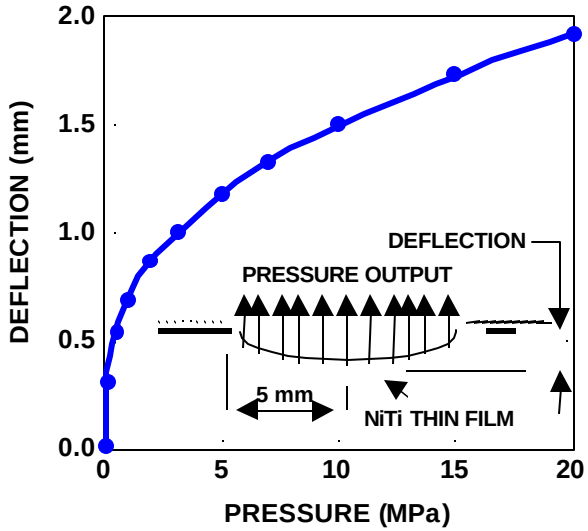
KEY TECHNOLOGIES DEMONSTRATED

- *FABRICATION OF THIN FILM NiTi ALLOYS*
- *HIGH MEASURED BANDWIDTH OF THIN FILM SMA*
- *SIMULATED HIGH PRESSURE OUTPUT OF SMA*
- *MICROFABRICATED VALVES USING MEMS TECHNOLOGY*
- *HIGH DENSITY ELECTRONICS*





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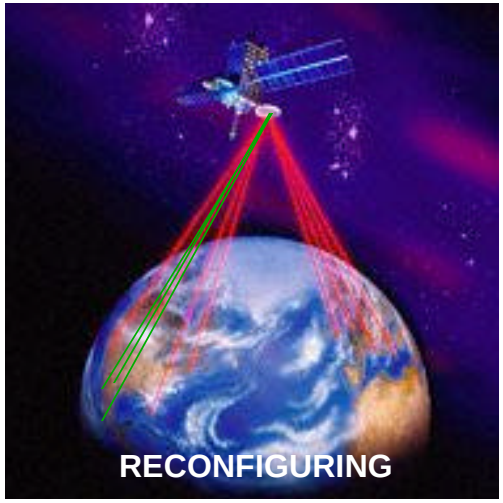
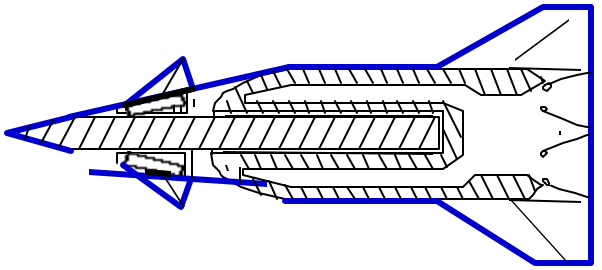
PROGRAM TECHNOLOGY INSERTION POINTS

CHAP



HIGHLY COMPACT ACTUATOR

ASSESS ADDITIONAL APPLICATION AREAS FOR LEVERAGE



COMPACT MISSILES RAYTHEON/ARMY

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